

Outbreak Summary

Approximately 300 persons attended a retirement party at the Nebraska State Capitol held on May 27, 1999. Most of the attendees worked in the Capitol. A private caterer (Caterer A) prepared and served food for the reception. Based on initial telephone interviews of persons reporting illness, the predominant symptoms were nausea and diarrhea, and the incubation period was approximately 24-30 hours.

The following foods were served at the retirement reception: Swedish meatballs, taco dip, crab dip, a vegetable tray and herbed ranch dip, cake, nuts and mints. The vegetable tray consisted of cucumbers, broccoli, cauliflower, carrots, celery, green peppers, and radishes. All foods were prepared onsite on the day of the reception with the exception of the nuts, which were purchased by a coworker, and the mints, which were made by a coworker.

The Swedish meatballs consisted of ground beef, ground pork, sour cream and flour. The meatballs were cooked twice. The taco dip contained layers of cream cheese mixed with salsa, ground beef, tomatoes, lettuce, onion, cheese and salsa. The taco dip was prepared manually by Caterer A in the kitchen at the State Capitol, and was not cooked after assembly. The crab dip contained canned real crab, cream cheese and ketchup.

The investigators received completed surveys from 227 attendees. Of those 227 attendees, 128 (56%) persons reported a gastrointestinal illness within 72 hours of the reception. The average interval between time of food consumption and onset of illness was 32.3 hours (range 6 to 67 hours). Table 1 shows the symptoms reported by ill attendees. The duration of symptoms generally lasted 24 to 36 hours. One person reported being symptomatic for five days. Eight persons sought medical treatment, mostly for re-hydration therapy.

Persons working in the security office at the State Capitol ate samples of the items served at the reception except the taco dip. None of the people from this office reported illness. Table 2 shows the association of illness and eating the taco dip.

Table 1: Distribution of Symptoms Reported in Persons Meeting the Case-definition.

Symptom	Number (%)
Nausea	117 (92.9%)
Diarrhea	111 (88.1%)
Abdominal Cramps	92 (74.2%)
Vomiting	90 (72.0%)
Headache	87 (70.7%)
Chills	73 (59.8%)
Muscle aches	72 (59.5%)
Sweats	67 (55.4%)
Bloody diarrhea	0 (0%)

Table 2: Association of Illness and Exposure to Taco Dip

Ate Taco Dip?	Met Case-definition	Did not meet Case-definition	Total
Yes	112	8	120
No	15	77	92
Total	127	85	212

Questions

- 1. Write a case definition for this outbreak. (5 points)**
- 2. Calculate the attack rate for persons eating the taco dip. Round to the nearest percentage. Please show your work. (3 points)**

3. Calculate the relative risk for the exposure to taco dip and illness. Round answer to the nearest tenth. Please show your work. (5 points)

4. Which of the following agents most likely caused this outbreak. Briefly describe your answer. (5 points)

Disease or Causative Agent	Incubation period	Symptoms	Common Food	Contributing Factors*	Duration and Annual US Cases
Staphylococcal Food Poisoning Staphylococcus aureus	2-4 hours (0 - 7)	Abrupt onset of severe nausea, cramps, vomiting, malaise	Poultry and meat products, egg and potato salads, sauces, dairy products, cream filled baked products	1, 3, 5	Usually Less than 24 hours 1,200,000 cases
Salmonellosis Salmonella spp.	12-36 hours (6 - 72)	Sudden onset of abdominal pain, fever, nausea, diarrhea; sometimes vomiting	Poultry and meat products, eggs, milk, melons, chocolate	1, 2, 3, 5	Several days 3,000,000 cases
Clostridium perfringens Food Poisoning	10-12 hours (6 - 24)	Abdominal cramps and watery diarrhea; sometimes with nausea, vomiting and fever	Meats, poultry, soups, gravies, sauces, stews, casseroles	1,2	Usually less than 24 hours 650,000 cases
Escherichia coli 0157:H7 Food Poisoning	4 days (3 - 9 days)	Abdominal cramps, watery diarrhea which later becomes grossly bloody; sometimes vomiting	Ground beef, raw milk, any foods handled by infected person	2, 5	2 - 9 days number of cases undetermined
Norwalk Virus and Norwalk-like Viruses	16-48 hours (5 - 72)	Nausea, abdominal cramps, vomiting, watery diarrhea	Shellfish, any foods handled by infected person	1, 4, 5	24 - 48 hours 181,000 cases

*Most common, as established by CDC:

- 1) Improper holding temperatures;
- 2) Inadequate cooking;
- 3) Contaminated equipment;
- 4) Food from unsafe source;
- 5) Poor personal hygiene
- 6) Other

5. An epidemic curve (2 points)

- A. graphically displays the scope of an outbreak
- B. shows the number of people affected by an outbreak
- C. shows the course of the outbreak over time
- D. all the above
- E. A and B

6. Please match the following words with the most correct definition.

Mean
Endemic
Epidemic
Median
Incidence
Mode
Prevalence
Pandemic

A measure of the frequency of a new injury or case of illness in a population. (2 points)

The occurrence of more than the expected number of cases of a particular disease, chronic condition, or injury occurring over a very wide area (several countries or continents). (2 points)

The middle value in a set of numbers (or the average of two middle numbers) above and below which lie an equal number of values. (2 points)

The occurrence of the expected number of cases of a particular type of disease, chronic condition, or injury in a given area, or among a specific group of people, over a particular period of time. (2 points)